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Note, by E. B. Seitz.—The value of g, in Mr. Baker's solution, p. 25, may be found as follows:

Let  $g = u_n$ ; then  $u_n = u_{n-1} \pm 1 \dots (1)$ , and  $u_{n-1} = u_{n-2} \mp 1, \dots (2)$ the upper sign being used when n is odd, and the lower when n is even. Adding (1) and (2), we have  $u_n - u_{n-1} - 2u_{n-2} = 0$ , an equation in Finite Differences, whose solution gives  $u_n = C_1 \cdot 2^n + C_2 \cdot (-1)^n \cdot \ldots \cdot (3)$ 

When n = 1,  $u_1 = 2C_1 - C_2 = 1 \dots (4)$ , and when n = 2,  $u_n = 4C_1$  $+C_2=1...(5)$ . From (4) and (5) we find  $C_1=\frac{1}{3}$ , and  $C_2=-\frac{1}{3}$ ; therefore  $g = u_n = \frac{1}{3}(2^n \pm 1)$ , the double sign being used as above. Hence the angles of the nth triangle are

$$\frac{1}{3}\pi \pm (\frac{1}{2})^n (\frac{1}{3}\pi - A), \quad \frac{1}{3}\pi \pm (\frac{1}{2})^n (\frac{1}{3}\pi - B), \quad \frac{1}{3}\pi \pm (\frac{1}{2})^n (\frac{1}{3}\pi - C).$$

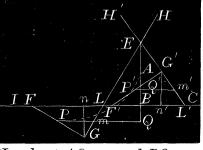
[Mr. Baker has sent a "Revised Solution" of the question, in which he represents g by the same formula obtained above, and also notices the error in the table, pointed out by Prof. Johnson, but our space will not permit its publication.

## ANSWER TO QUERY (SEE P. 176, VOL. IV), BY THE EDITOR.

From the fixed point E draw a line EAB perpendicular to the fixed line

CI and intersecting it in B, at any distance a from the point E, and let Arepresent the middle point of EB.

Let FGH be any position of the right angle, the side GH intersecting the line CI in L, and let the fix'd length of GE = a; then, to find the locus of P, the middle point of GF, draw PQperpend'ular to AB, intersecting the side



GH in m; draw Gn perpendicular to CI, and put AQ = x and PQ = y. Because  $AE = \frac{1}{2}a$ ,  $EQ = \frac{1}{2}a + x$ , and  $EQ = \frac{1}{2}a - a + x = x - \frac{1}{2}a$ ; ...  $Gn = 2(x - \frac{1}{2}a)$  and  $Fn = \sqrt{\langle a^2 - [2(x - \frac{1}{2}a)]^2 \rangle} = \pm 2\sqrt{(x^2 - ax)}$ .

Hence, from the similar triangles FnG and EQM, and FnG and PGm.

Fn: 
$$Gn::EQ: Qm$$
, or  $2\sqrt{(x^2-ax)}: 2(x-\frac{1}{2}a)::x+\frac{1}{2}a: Qm = \frac{x^2-\frac{1}{4}a^2}{\sqrt{(x^2-ax)}}$ 

$$Fn: FG:: PG:: Pm, \text{ or } 2\sqrt{(x^2-ax)}: \quad a \quad :: \quad \frac{1}{2}a : Pm = \frac{\frac{1}{4}a^2}{\sqrt{(x^2-ax)}}.$$
But  $Qm + Pm = y = \frac{x^2 - \frac{1}{4}a^2}{\sqrt{(x^2-ax)}} + \frac{a^2}{\sqrt{(x^2-ax)}} = \frac{x^2}{\sqrt{(x^2-ax)}}; \quad : \quad y^2 = \frac{x^3}{x - a},$ 

But 
$$Qm + Pm = y = \frac{x^2 - \frac{1}{4}a^2}{\sqrt{(x^2 - ax)}} + \frac{a^2}{\sqrt{(x^2 - ax)}} = \frac{x^2}{\sqrt{(x^2 - ax)}}$$
;  $\therefore y^2 = \frac{x^3}{x - a}$ 

which is the equation to the cissoid.